INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2004/001675

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. [7]: C12N 15/24, C12N 15/38, C12N 1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
SEE ELECTRONIC DATABASES

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
SEE ELECTRONIC DATABASES

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
WPIDS, CAPLUS, MEDLINE (IL-10, latent, virus)
GENEBANK, DGENE (SEQ ID NO: 1, SEQ ID NO 10)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Jenkins, C. et al (2002) "Human cytomegalovirus UL111.5A-region transcripts are expressed during both experimental and natural latent infection of myeloid cells" *3rd College of Health Sciences and Medical Foundation Research Conference: From Cell to Society 3*, 18-SEPT-2002 to 19-SEPT 2002, Blue mountains, Australia, e-poster/mini-poster number 22-9.	1 to 10, 13 to53
X	Xu, Z-G et al (2001) "The latency pattern of Epstein-Barr virus infection and viral IL-10 expression in cutaneous natural killer/T-cell lymphomas" *British Journal of Cancer* 84(7): 920-925. (The whole document)	1, 3-6, 8-10, and 13-53
X	Miyazaki, I et al (1993) "Viral Interleukin 10 Is Critical for the Induction of B Cell Growth Transformation by Epstein-Barr Virus" *The Journal of Experimental Medicine* 187: 439-447.	1, 3-6, 8-10, 13-53.

[X] Further documents are listed in the continuation of Box C [X] See patent family annex

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
12 January 2005	2 FEB 2005
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized officer **ANDREW ACHILLEOS** Telephone No : (02) 6283 2280

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P/X	Jenkins, C. et al (2004) "A Novel Transcript with Homology to Human Interleukin-10 Is Expressed during Latent Human Cytomegalovirus Infection" *Journal of Virology* **78**(3): 1440-1447.	

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
WO	0116153	AU	73461/00		
WO	02057437	EP	1356062	US	6692954

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX

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Box No. I Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

   a. type of material

      [X] a sequence listing

      [ ] table(s) related to the sequence listing

   b. format of material

      [ ] in written format

      [X] in computer readable form

   c. time of filing/furnishing

      [ ] contained in the international application as filed

      [X] filed together with the international application in computer readable form

      [ ] furnished subsequently to this Authority for the purposes of search

2. [ ] In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☒ Claims Nos.: **11, and 12**
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
The potential vIL-10 ligands encompassed by these claims make up such a large number of compounds that it is not economically viable to search these claims.

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:
See attached Supplemental Box "Continuation of Box III" below

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

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Supplemental Box
(To be used when the space in any of Boxes I to VIII is not sufficient)

Continuation of Box III:

The feature common to all the claims is: a viral IL-10 (vIL-10) homologue expressed during the latent phase of infection by a virus of the herpesvirideae group. However, vIL-10 that is expressed during the latent phase of infection by a virus of the herpesvirideae group was known at the priority date (see Jenkins, C. et al (2002), Z-G Zu et al (2001) and I Miyazaki et al (1993)). Therefore the claims lack unity a posteriori, and can be grouped as follows:

Group 1: Claims 1 to 10, and 26. Nucleic acids, encoded peptides, and vectors/host cells containing vIL-10 that is expressed during the latent phase of viral infection of the herpesvirideae group.

Group 2: Claims 11 to 18, 21 to 29. Ligands and methods of detecting ligands of vIL-10 that is expressed during the latent phase of viral infection of the herpesvirideae group.

Group 3: Claims 19 to 21, 28 to 38, 52, and 53: methods of diagnosing/screening for disease using vIL-10 that is expressed during the latent phase of viral infection of the herpesvirideae group.

Group 4: Claims 25, 39, and 41 to 45: methods of treatment using vIL-10 that is expressed during the latent phase of viral infection of the herpesvirideae group.

Group 5: Claims 46 to 48, and 51: methods of cleansing biological samples using vIL-10 that is expressed during the latent phase of viral infection of the herpesvirideae group.